

## City of Buckeye

## Intelligent Transportation Systems Strategic Plan

### Technical Memorandum #3 – Existing and Future Conditions

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# 1 BUCKEYE ITS STRATEGIC PLAN PROCESS

The City of Buckeye has received funding from the Maricopa Association of Governments (MAG) to develop an Intelligent Transportation Systems (ITS) Strategic Plan for the City. The goal of an ITS Strategic Plan is to identify strategies and tools to allow the City to manage its transportation network and information exchange more efficiently. ITS includes communications and field technologies that are integrated into the transportation network such as traffic signals, cameras, fiber optic communications, and central management software. ITS technologies are widely deployed throughout the MAG region, the County, and the world, and the City is in a unique position to create a plan for the development of an ITS Program as it continues to grow in both physical size and population.

The project to develop this Plan will include the following phases:

- **Establishing a Stakeholders Group** – identifying City staff and technical staff from other agencies to provide input into the Plan and guide its development.
- **Existing and Future Conditions** – learn about existing infrastructure, processes, resources, and planned activities within Buckeye.
- **Transportation Systems Management and Operations Plan** – identify City focus areas related to transportation and information sharing such as operation of key corridors, management of events and incidents, and improved freeway coordination. The Plan will identify resources that will support the City in operations and management for those focus areas.
- **Needs and Strategy Development** – collect needs and challenges related to transportation operations and data/information sharing in the City to guide the development of ITS strategies that could address those needs.
- **Funding and Implementation** – identify methods to help the City implement ITS strategies in a phased manner and obtain the necessary resources and support for continuing operations and management of Buckeye's transportation and communications network.

This technical memorandum provides an overview of the Existing and Future Conditions of the City of Buckeye in terms of its transportation and communications networks as well as the City organization and processes that supports them.

## 2 DATA COLLECTION

The information in this document provides an overview and compilation of multiple data and information outlets related to current and future infrastructure, operations, and processes in the City of Buckeye and in the region. The three key sources of data and information used for this document are:

### *1. Existing City documents and references*

The following City documents and standards were reviewed in order to identify existing conditions, needs, and ways that an ITS program can best align with current City priorities:

- Imagine Buckeye 2040 presentation for General Plan Update (2016);
- Buckeye Capital Improvement Program (2012);
- City of Buckeye General Plan (2007);
- Buckeye Development Code (2016);
- Buckeye Code of Ordinances;
- Sun Valley and Wintersburg Parkway Alignment – Major General Plan Amendment (2015);
- Buckeye Capital Improvement Program Standard Operating Procedures (2016);
- Buckeye Engineering Standards; and
- Department Organizational Charts;

## 2. One-on-one conversations with various staff at the City

Six one-on-one phone calls or meetings were held with City staff in the following departments:

- Engineering;
- Public Works;
- Police;
- Fire;
- Information Technology (IT); and
- and Procurement and Contracts.

The goal of these one-on-one conversations was to collect more specific details related to each department's roles, responsibilities and processes that may relate to ITS in some way. The focus of these discussions is to gain an understanding of how ITS may support the key needs and opportunities of each department.

## 3. Regional documents related to ITS planning and the regional transportation network

In addition to City documents, there are regional planning and guidance documents related to transportation and ITS that were reviewed to make sure the Buckeye Plan aligns with other regional initiatives. Documents that were reviewed for this report included:

- MAG Transportation Improvement Program (TIP) 2017-2021;
- I-10 Hassayampa Valley Framework Study (2007);
- I-8 and I-10 Hidden Valley Framework Study (2008);
- MAG Systems Management and Operations (SMO) Plan (2017 – in progress); and
- MAG ITS Strategic Plan (2012).

## 2.1 Summary of Existing Documents

Table 1 provides an overview of the City and regional documents that were collected to inform the City ITS Plan. **Appendix A** provides some examples of information in the documents can be used to inform ITS goals, strategies, and implementation.

**Table 1 – Overview of Key Documents**

Document	Key Information
<b>Buckeye Documents</b>	
Imagine Buckeye 2040 presentation (2016)	<ul style="list-style-type: none"> <li>• Identifies a vision for the City as well as the results of a community survey that identify community priorities, City assets and challenges and key items to be addressed.</li> <li>• Identifies projected land use and transportation network.</li> </ul>
Buckeye Capital Improvement Program FY 2011-12 through FY 2017-18 (2012)	<ul style="list-style-type: none"> <li>• Identifies projects that are programmed by the City for implementation by FY 2017-18. Includes a section on ITS, including 'major ITS initiatives', ITS projects, communications projects and CIP priorities.</li> </ul>
Buckeye General Plan (2007)	<ul style="list-style-type: none"> <li>• Provides projected growth numbers, including growth in land use and development and in population.</li> <li>• Identifies a community vision statement with four components, including those that provide a vision for transportation and connectivity in Buckeye.</li> <li>• Identifies Goals and related Policies to achieve these goals, many of which relate to mobility, efficiency and connectivity.</li> </ul>

Document	Key Information
Buckeye Development Code (2016)	<ul style="list-style-type: none"> <li>• Implements the planning policies in the General Plan to promote healthy and sustainable development and efficient uses in the City as well as ensure public safety, convenience and accessibility.</li> <li>• Section on Transportation and Connectivity provides standards and guidelines to promote a connected and multi-modal transportation system where safety is promoted and traffic impacts are mitigated.</li> </ul>
Buckeye Code of Ordinances	<ul style="list-style-type: none"> <li>• Describes City regulations related to development impacts fees and construction requirements for development.</li> </ul>
Sun Valley and Wintersburg Parkway Alignment – Major General Plan Amendment (2015)	<ul style="list-style-type: none"> <li>• Describes a new development and proposed realignment of a City roadway and its implications on traffic and connectivity.</li> </ul>
Buckeye Capital Improvement Program Standard Operating Procedures (2016)	<ul style="list-style-type: none"> <li>• Describes the updated procedures that will be used starting in 2017 to develop, and later update the City CIP.</li> <li>• Provides insight on the key decision makers in terms of CIP and project programming.</li> <li>• Provides an overview of the CIP and project development timeline for the City.</li> </ul>
Buckeye Engineering Standards	<ul style="list-style-type: none"> <li>• Identifies the existing standards that are used by the city related to intersections, half street improvements and identifying standards that are missing and should be developed.</li> </ul>
Departmental Organizational Charts	<ul style="list-style-type: none"> <li>• Provides an overview staff positions to get an understanding about where ITS is currently being considered in the City and where future ITS staff could reside.</li> </ul>
Regional Documents	
MAG Transportation Improvement Program (TIP) FY 2017-2012	<ul style="list-style-type: none"> <li>• Identify programmed projects in Buckeye and neighboring jurisdictions and their funding source (local, private, federal/CMAQ). Projects that involve street improvements, intersection improvements or pavement disturbance create opportunities to consider deploying ITS infrastructure, such as fiber and conduit.</li> <li>• Identify key ADOT, MCDOT or neighboring agency projects that could provide Buckeye with an opportunity to partner to improve their transportation or ITS network.</li> </ul>
I-10 Hassayampa Valley Framework Study (2007)	<ul style="list-style-type: none"> <li>• Key long range planning document used by Buckeye in terms of population and growth projections for the areas around and north of the I-10.</li> <li>• Provides an overview of a future regional roadway network that will affect Buckeye in terms of planning for future traffic circulation as well as the need to provide connectivity between City and regional networks.</li> </ul>
I-8 and I-10 Hidden Valley Framework Study (2008)	<ul style="list-style-type: none"> <li>• Provides growth projects and an overview of a future regional roadway network for areas south of the I-10 that will affect Buckeye in terms of planning for future traffic circulation as well as the need to provide connectivity between City and regional networks.</li> </ul>
MAG Systems Management and Operations (SMO) Plan (2017 – in progress)	<ul style="list-style-type: none"> <li>• Identifies regional vision and priorities in terms of both priority facilities (freeways and arterials) as well as priority programs and</li> <li>• Will be important for Buckeye to align with the regional vision for operations provided in the SMO Plan, including the ultimate buildout for transportation facilities as well as regional systems and processes to support traffic management.</li> <li>• Will provide overview of potential future funding opportunities for ITS and operations in the region.</li> </ul>

Document	Key Information
MAG ITS Strategic Plan (2012)	<ul style="list-style-type: none"> <li>Identifies regional ITS goals and strategic priorities for ITS in the MAG region and how they align with the Regional Transportation Plan (RTP). A Buckeye ITS Plan should align with and support these goals to provide the best connectivity and interoperability with partner agencies.</li> <li>Identifies recommended funding allocation targets to support ITS investments, which are available to Buckeye to support their ITS program.</li> <li>Identifies key partnerships to support improved operations, which Buckeye needs to consider in order to best position themselves to obtain regional support in terms of operations and funding.</li> </ul>

## 3 EXISTING CONDITIONS IN BUCKEYE

This section provides an overview of the existing City facilities and the transportation network, including the existing state of ITS deployment in the City.

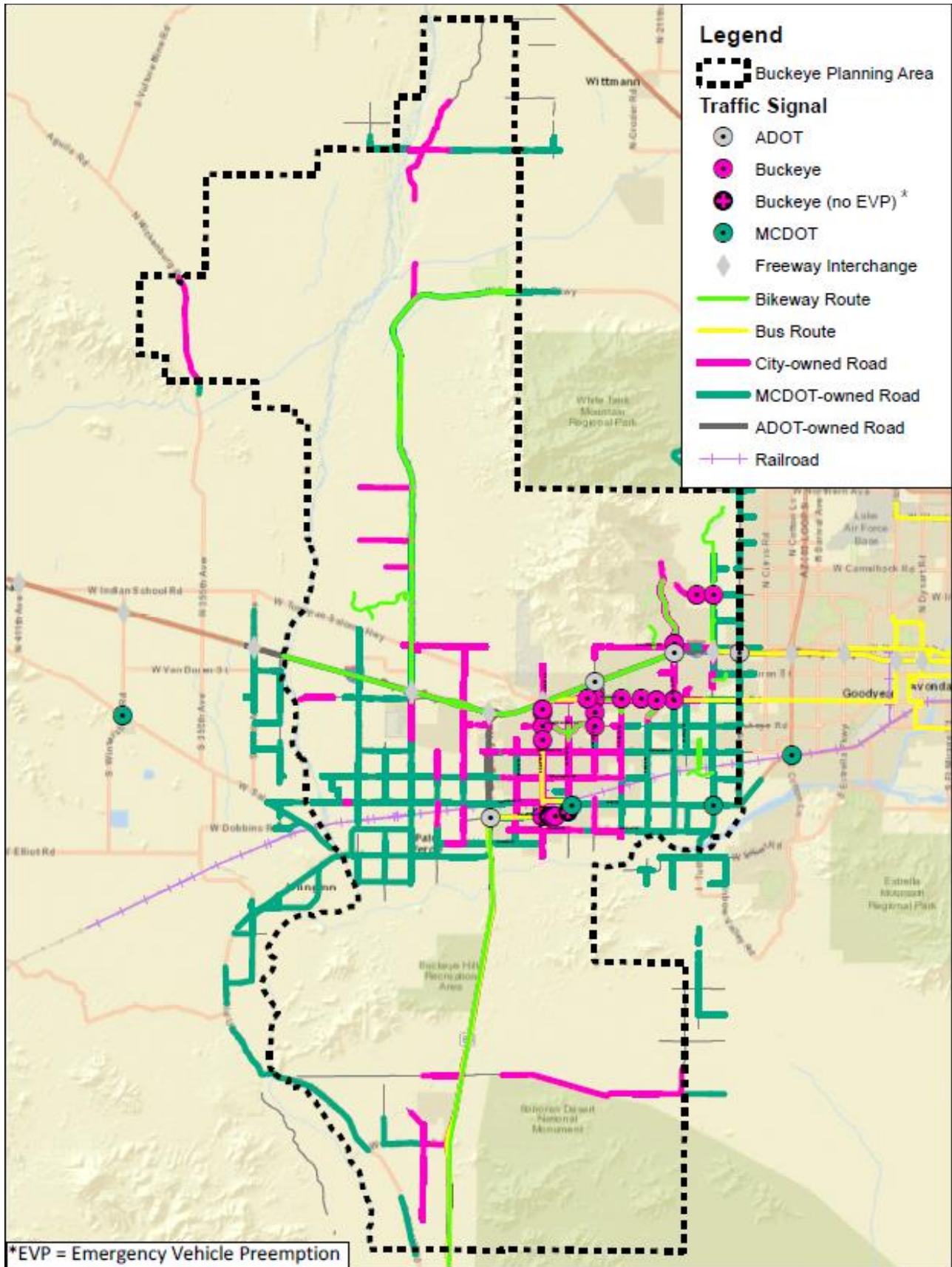
### 3.1 City Transportation System

The City currently maintains over 1,000 lane miles of roadway within its jurisdiction. In addition to Buckeye-owned roadways, there are also roadways owned and operated by Maricopa County and ADOT within the Buckeye planning area. There are six freeway interchanges within the City boundaries, all of which provide access to the I-10 freeway. The Union Pacific Railroad (UPRR) cuts through the southern portion of the City. **Figure 1** provides an overview of the major roadway network within the City as well as the respective roadway ownership.

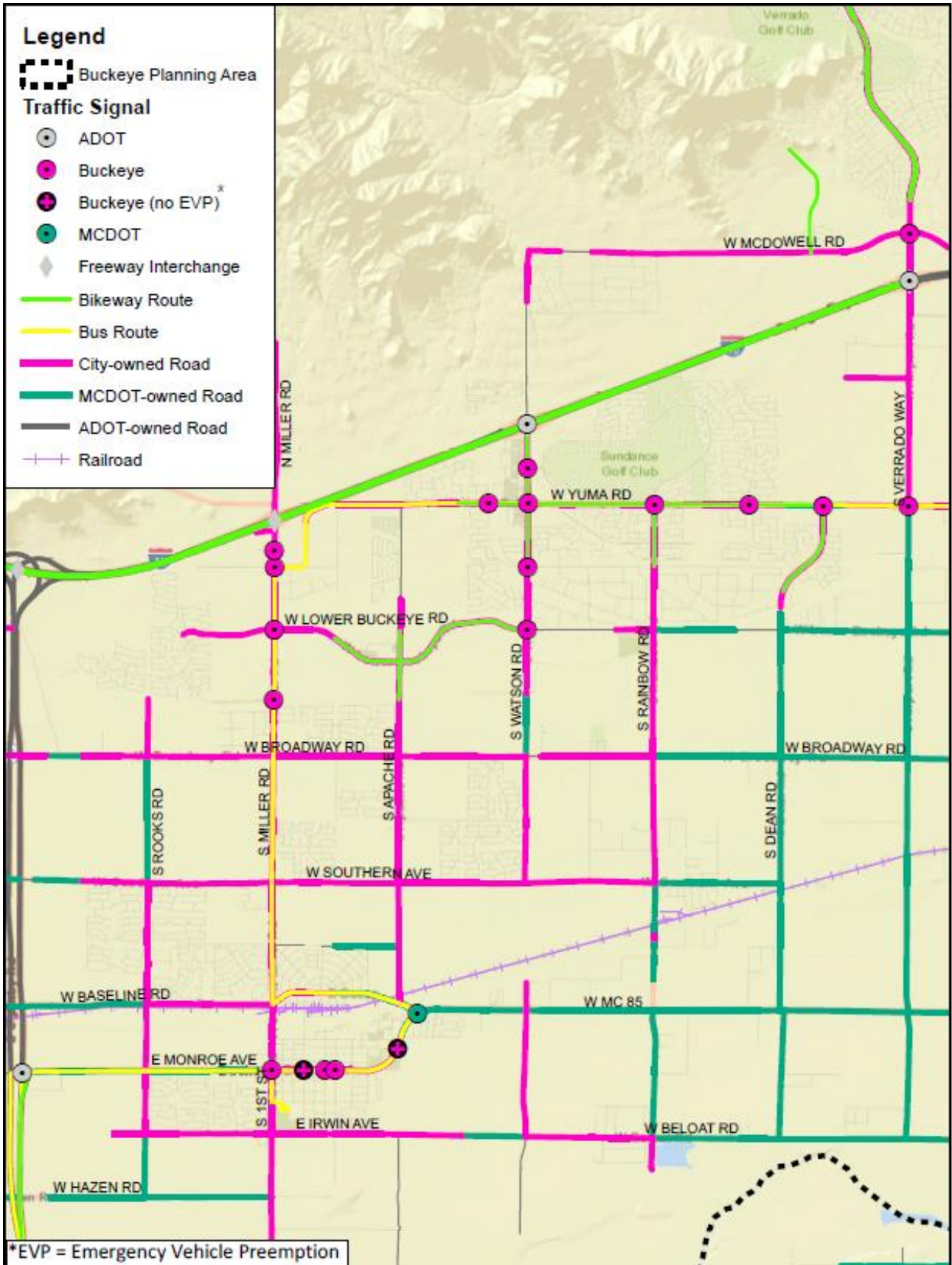
There is one Valley Metro bus route that enters and traverses through Buckeye and provides public transportation that connects to other municipalities within the MAG planning area, including Gila Bend to the south. There is another local route operated by Valley Metro that makes trips between downtown Buckeye and the commercial areas along Watson Road as well as to the Library at Yuma and Dean. Buckeye does not operate any City-specific public transportation within the City. All Buckeye arterial and collector streets that have been widened include facilities to accommodate bicycle travel, and there are many identified bike routes that are located on ADOT or MCDOT-owned roadways in the Buckeye jurisdiction as well.

#### 3.1.1 Current ITS and Communications Infrastructure

There are currently 21 traffic signals within the City jurisdiction that are all owned, operated and maintained by the City. There are two traffic signals within the Buckeye jurisdiction that are owned and maintained by Maricopa County, which include the intersections at Baseline and MC-85 and Jackrabbit and MC-85. ADOT owns and operates intersections at Watson and I-10, Perryville and I-10, Verrado and I-10, and SR 85 and MC-85. A majority of the existing traffic signals are located south of I-10 (**Figure 2**), although there is a rapid expansion of the roadway network in the developing area of Buckeye north of the I-10, and there are many new traffic signals planned or in development in the near-term.



**Figure 1 – Buckeye Existing Transportation Network**



**Figure 2 – Buckeye Existing Transportation Network (Downtown View)**

All of the traffic signals within the City run independently and free, meaning that they are not coordinated together and are not controlled through a central management system. The traffic signals are currently operated by three different types of signal controllers, including Siemens M53s, ASC 3 and Cobalt controllers. The City is currently in the process of doing a phased transition of all controllers to Cobalt.

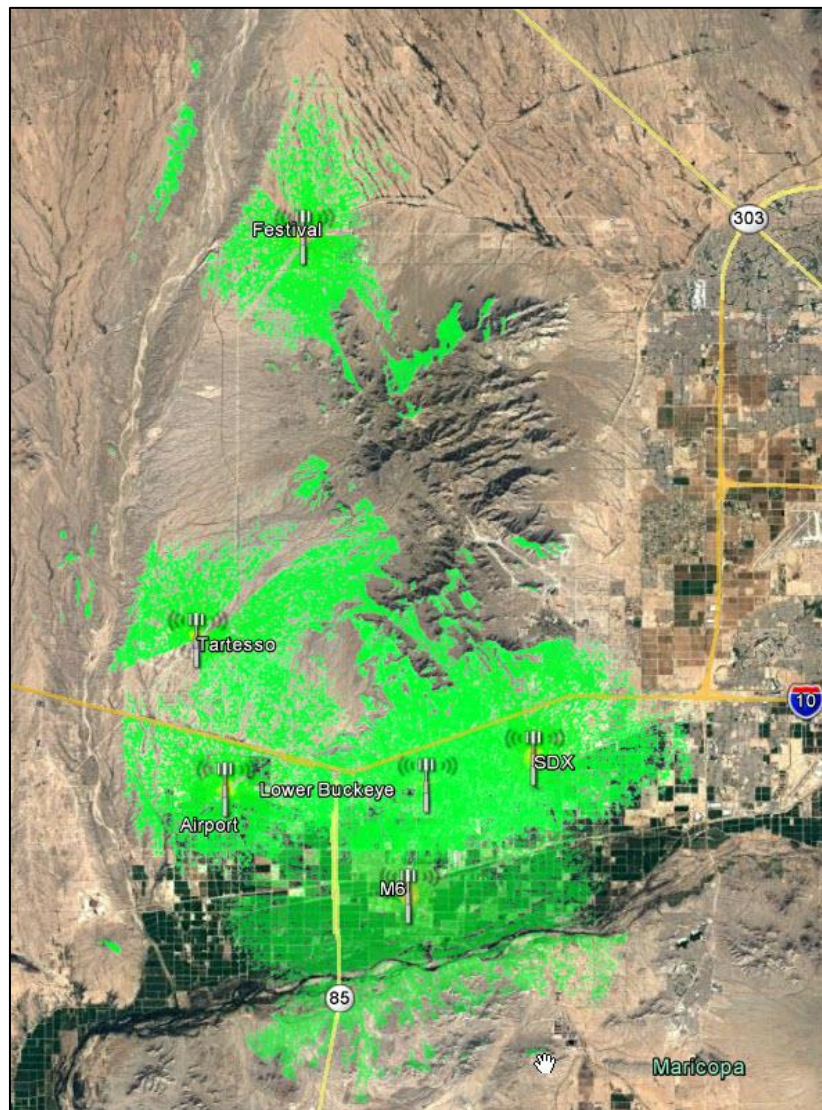
19 of the 21 signalized intersections are equipped with emergency vehicle preemption (EVP) technology, which allows emergency vehicles, such as fire and EMS, to trigger a green light at a traffic signal during emergencies to reduce the potential delay for the emergency vehicle due to the traffic signal. The two intersections that are not equipped with EVP are so because there was no capacity in the existing conduit to connect to the EVP devices. There is a proposed project in the City CIP to upgrade one of the intersections, which would allow additional conduit to be installed and support EVP deployment. There are no plans to provide additional conduit to support EVP at the other currently unequipped intersection.

There are three types of detection that are currently used at intersections to provide presence and dilemma zone protection at a traffic signal – video identification detection (VID), radar detection and loop detection. Many intersections have a combination of two of these types of detectors to trigger the signal. The data from these detectors is not collected or viewed in a centralized location.

The City owns one Pelco brand closed-circuit television (CCTV) camera that can be used to view an intersection; however, the camera is not currently deployed as the City is working on getting an internet connection to an intersection to allow the camera feed to be transmitted and view remotely via the internet.

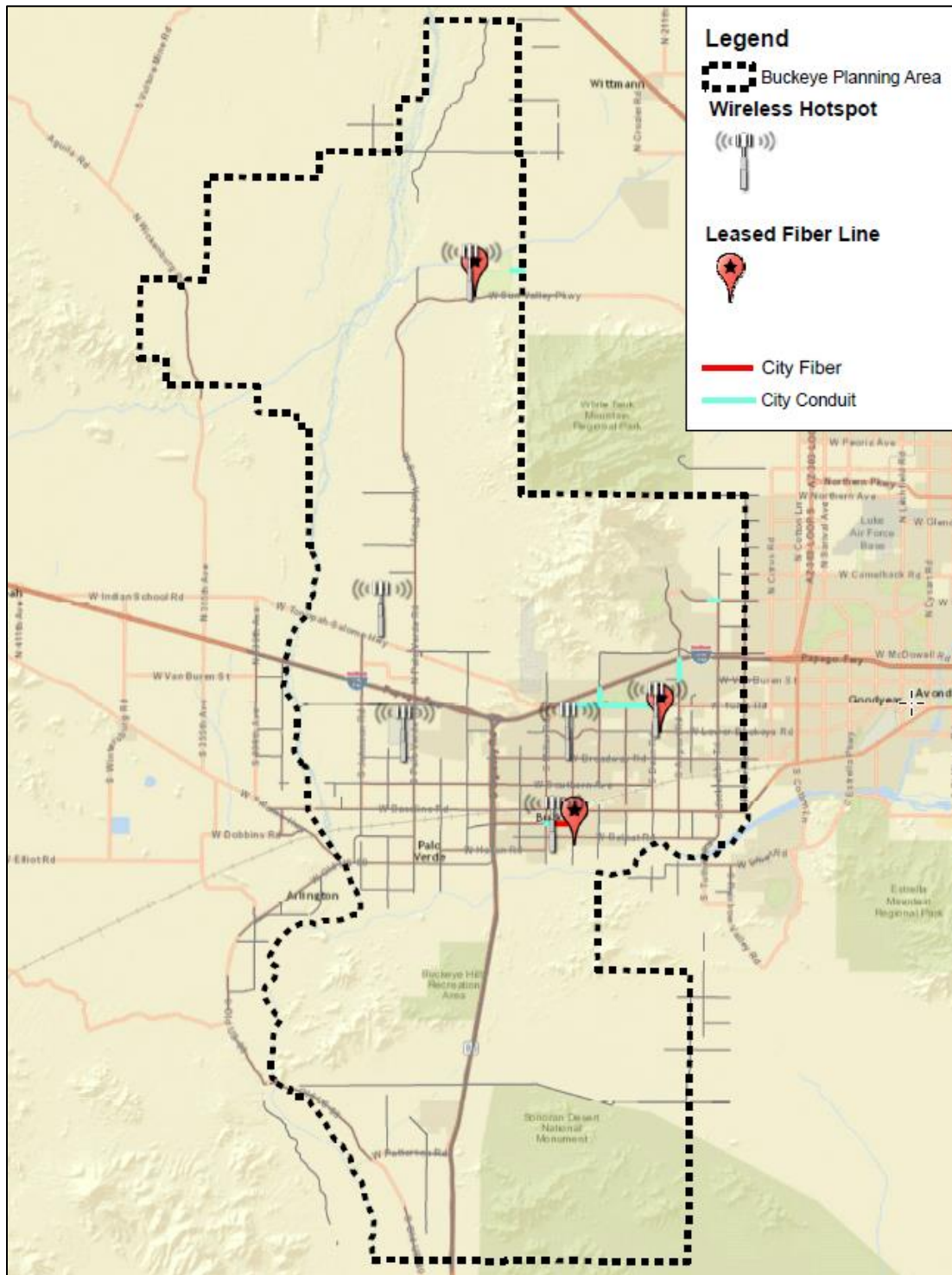
Even though there is current no communications to the traffic signals in the City, there is an existing communications network in Buckeye that is provided by the City IT department to provide centralized management and connectivity of the City enterprise system. The foundation for this communications network is wireless hotspots that provide a majority of the coverage for the City, shown in **Figure 3**.

Wireless coverage is supplemented by approximately one-mile of City-owned fiber optic communications and provided redundancy through fiber lines that the City leases from Cox Communications (**Figure 4** and **Figure 5**). The City also owns a few miles of conduit that does not house any fiber, but is available for future fiber installation as the City grows and establishes a fiber communications network.



**Figure 3 – Wireless Communications Coverage in Buckeye**

The City is currently working with MAG to establish a connection to the Regional Community Network (RCN) via wireless radio. The RCN is a regional fiber and wireless communications backbone in the MAG region. This connection would be accomplished by using a wireless radio 'shot' from a centralized radio in Buckeye to a wireless radio tower in neighboring Goodyear; the tower in Goodyear has a hard fiber connection to the RCN.



**Figure 4 – Buckeye Existing Communications Network**



**Figure 5 – Buckeye Existing Communications Network (Downtown View)**

### 3.1.2 ITS Components to Support Public Safety

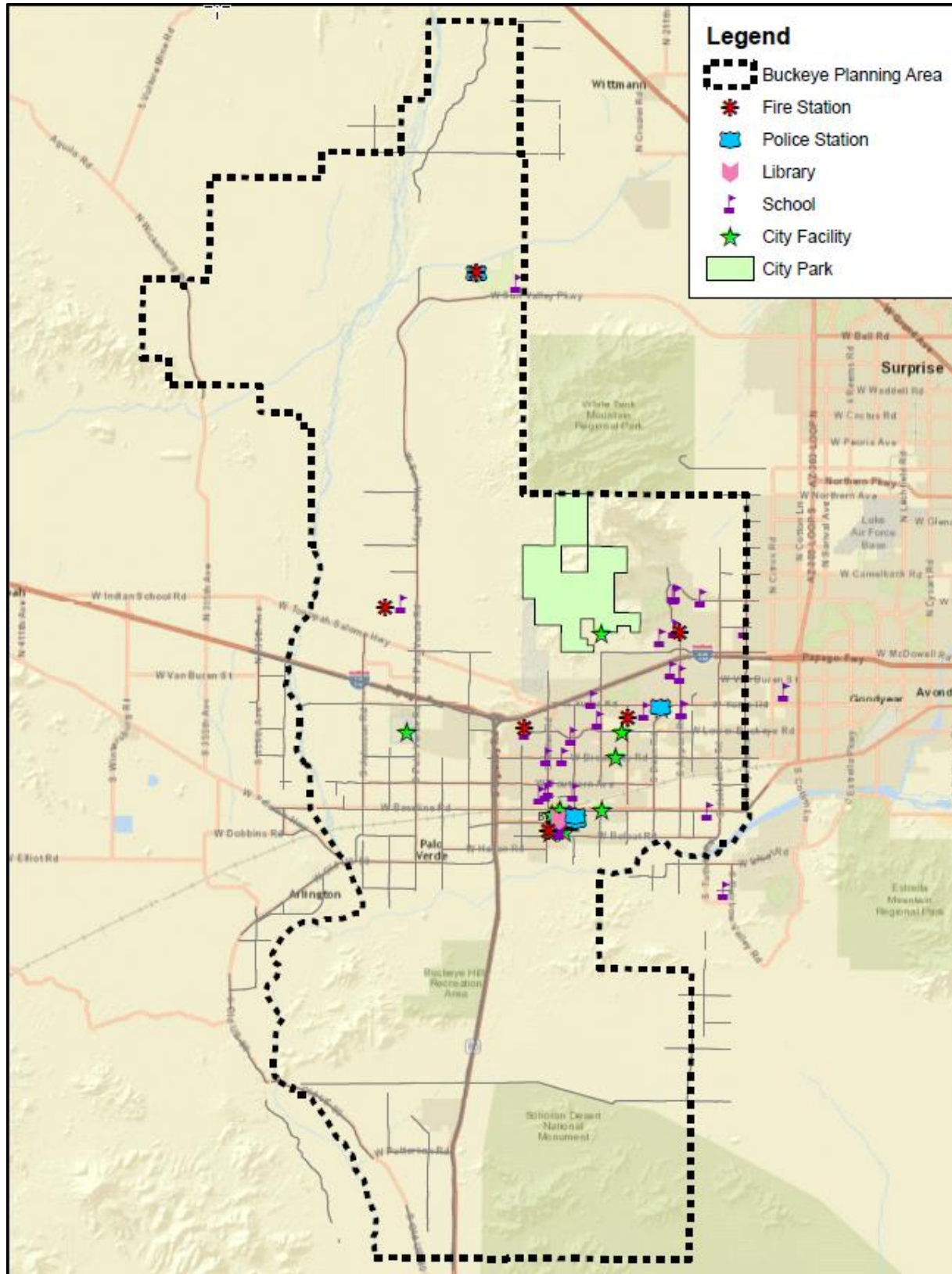
There is a natural connection between ITS and public safety, mainly in terms of sharing of data and supporting incident and emergency response in the City. The City Fire Department relies on a strong and reliable wireless radio network to support communications between vehicles as well as with the Dispatch center, which is located in the City of Phoenix. The City is part of the Regional Wireless Cooperative (RWC), which helps support the wireless radio network in the region, in addition to support provided by IT for the City wireless network. Within each fire vehicle, there is a mobile data terminal that provides real-time information to the responders via wireless communications from Dispatch.

The City Police Department has a local dispatch center along Apache Road, where information from 911 call centers is routed to allow the City to dispatch its officers to respond to the incident or emergency. Dispatch houses the department's computer-aided dispatch (CAD) system, which is the central system for all police information that is updated in real-time. Similar to fire, most of the police patrol vehicles in the City are equipped with a mobile data terminal (MDT) where real-time information is provided in-vehicle to officers in the field. This is done via a virtual private network (VPN) connection to the dispatch center. The Police Department has deployed public safety cameras at seven intersections within the City that provides them with recorded video of intersection activity. This video does not feed into a centralized system so Police coordinate with the Traffic Signals Branch of the Public Works Department to physically retrieve video from the DVR device if it needs to be reviewed.

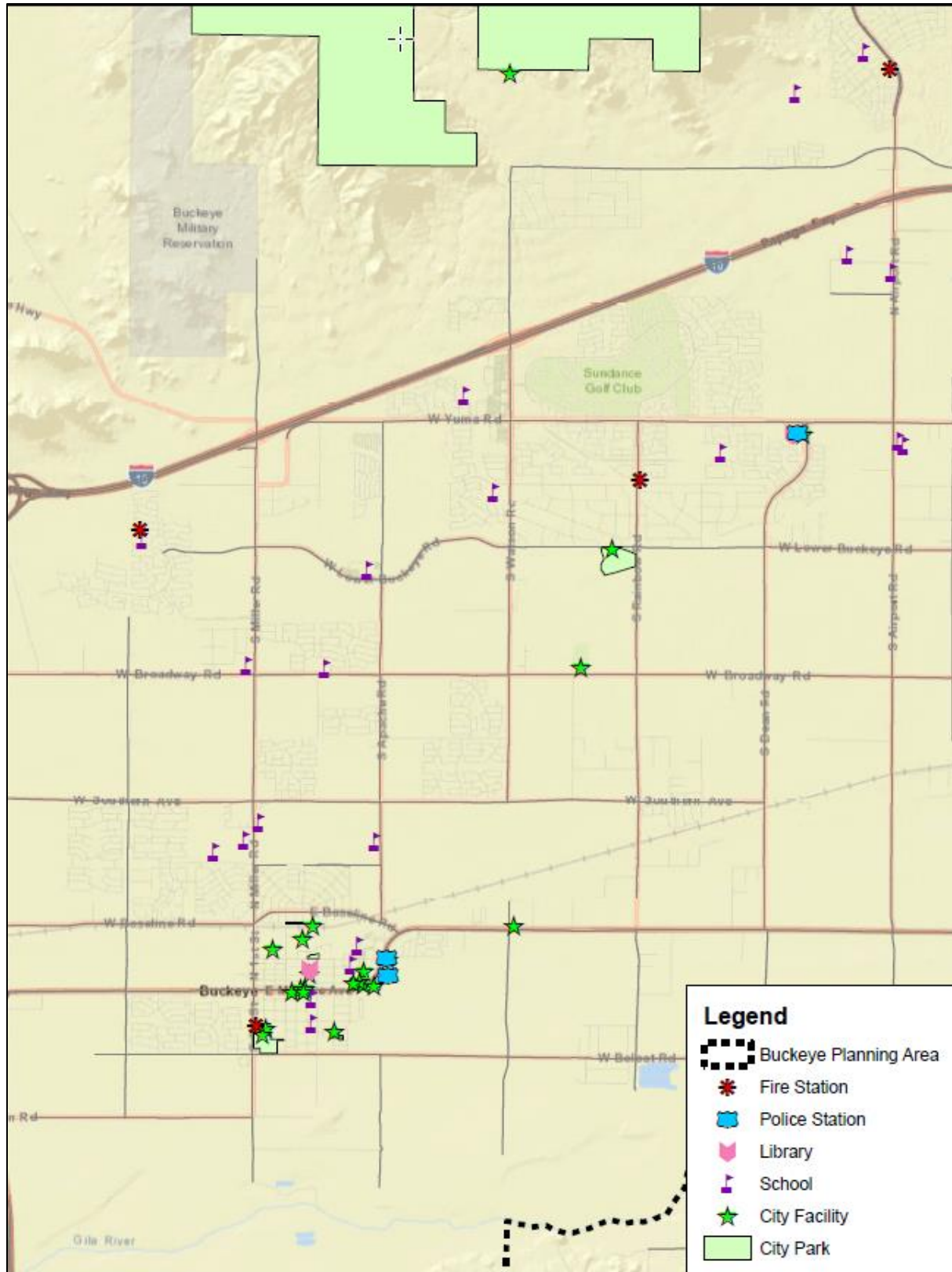
The City Emergency Operations Center (EOC) is a set of equipment (not in a vehicle) that the City uses during large scale emergencies within the City and the region. It includes communications equipment that provides a phone and internet connection through the City server and provides direct connection to the County EOC through the WebEOC platform. The current EOC is set up to be activated in one of the fire stations in the City, although it is portable and can be moved to wherever is most appropriate.

## 3.2 City Facilities

In addition to the transportation facilities in Buckeye maintained by the Public Works Department, the City provides essential services for its residents, including police, fire, parks and recreational areas, libraries, community centers and other facilities that are owned and operated by the City to provide services to residents. **Figure 6** and **Figure 7** provide an overview of the City facilities in Buckeye.



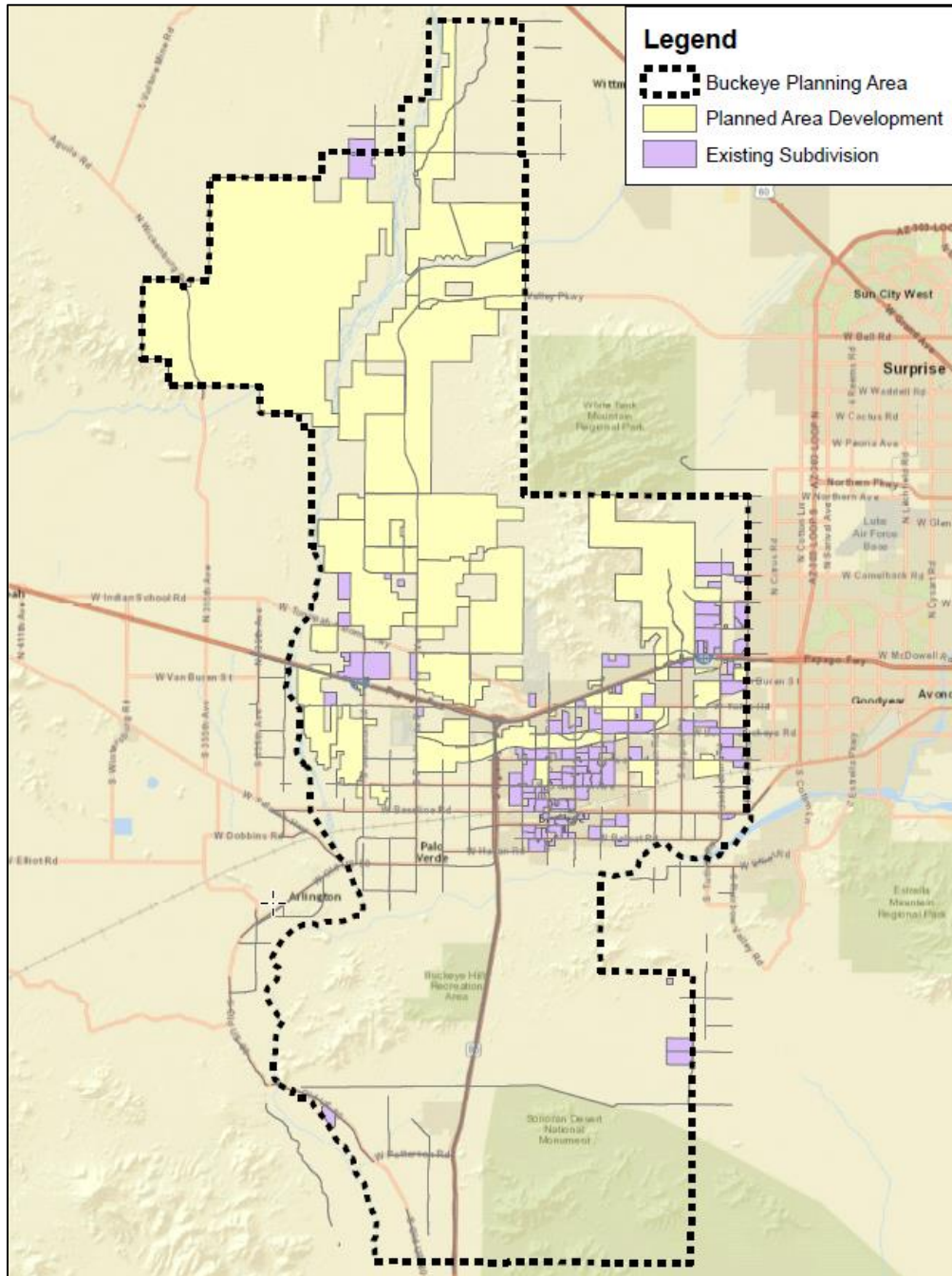
**Figure 6 – Buckeye Existing Facilities and Services**



**Figure 7 – Buckeye Existing Facilities and Services (Downtown View)**

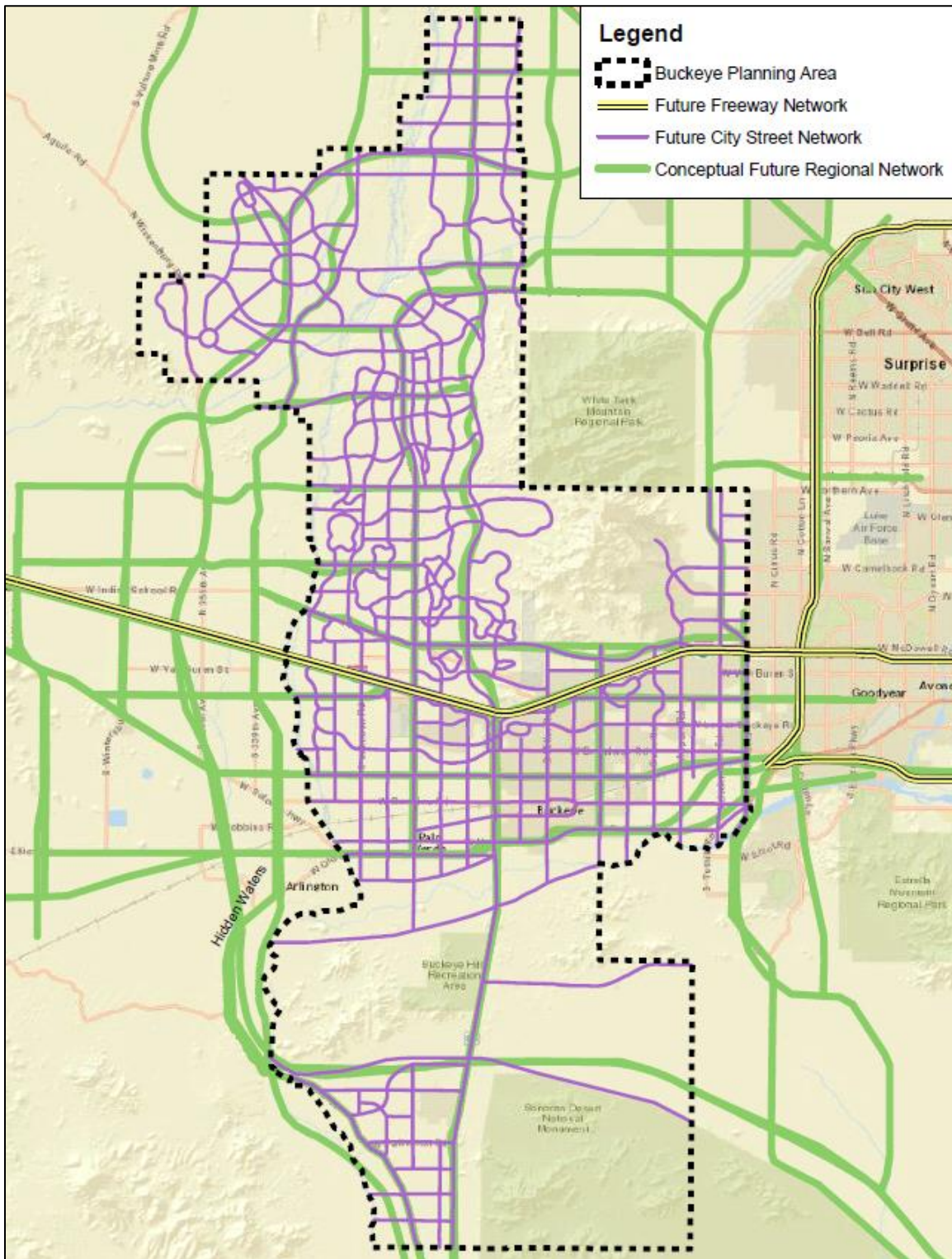
## 4 FUTURE CONDITIONS

The City of Buckeye is one of fastest growing cities in the Phoenix metro area, with a population of approximately 62,500 people. Between 2000 and 2010, the population of Buckeye increased by 600%, adding more than 42,000 people. In physical size, Buckeye is nearly 600 square miles, with greater than half of that area annexed, although only a portion of the City is currently developed, with 45% of the land in Buckeye categorized as vacant and 31% categorized as open space. However, of that 45% of land that is currently vacant, 58% of it is entitled as part of one of the 25 approved planned area developments in the City. **Figure 8** shows the subdivisions and the approved planned area developments in Buckeye.



**Figure 8 – Existing and Planned Developments in Buckeye**

To accommodate the future development, there will be a much more extensive transportation network in place, both within the City as well as in the region. **Figure 9** shows the future roadway network as anticipated by the City, per the 2008 General Plan, as well as at a regional level per the MAG Regional Transportation Plan (RTP), the Hassayampa Framework Study and the Hidden Valley Framework Study.



**Figure 9 – Future Buckeye and Regional Roadway Network**

Within the 10-year timeframe that this ITS Plan is considering, freeway changes that can be anticipated include the widening of I-10 through Buckeye, the construction of SR 30, which will connect the Loop 202 South Mountain Freeway to the Loop 303, the progression of I-11

The ultimate conceptual roadway network from the Hassayampa and Hidden Valley framework studies is projected for more than 10 years from the time of this study and should be more thoroughly vetted in a subsequent update to this plan.

However, some specific parkway studies have been completed to preserve right of way for some of the individual roadways identified in the conceptual network. These studies identified a recommended alignment for a set of future *parkways*, which are defined as higher capacity roadways that will help meet future travel demand in the West Valley.

The parkway planning documents pertinent to the Buckeye Planning Area include:

- Camelback Parkway: Sun Valley Parkway to Tonopah Parkway, 2013
- Deer Valley aka Beardsley Parkway: US60 to Wild Rose Parkway, 2012
- Dove Valley Parkway: US60 to Hidden Waters Parkway, 2013
- Greenway Parkway: Turner Parkway to Hassayampa Freeway, 2014
- Hidden Waters North Parkway: I-10 to SR74, 2012
- Hidden Waters South Parkway: Watermelon Road to I-10, 2010
- Jackrabbit Corridor Study: I-10 to Sun Valley Parkway, 2007
- McDowell Parkway: 339<sup>th</sup> Ave to Dean Road, 2010
- Peoria Avenue Corridor Study: Jackrabbit Road to Dysart Road, 2011
- Southern Parkway: Salome Highway to SR85, 2014
- Turner Parkway Feasibility Study: I-10 to SR74, 2010
- Wild Rose Parkway Feasibility Study: Sun Valley Parkway to US60, 2013
- Wintersburg Parkway: Salome Parkway to Turner Parkway, 2014
- Yuma Parkway Feasibility Study: Salome Highway to Palo Verde Road, 2012

## 5 ITS-RELATED NEEDS AND OPPORTUNITIES

During the data collection activities, existing needs and gaps in the City were identified along with opportunities that can be leveraged to support future City development. Many of the needs that were acknowledged were done so by multiple sources, whether in multiple plans or by multiple departments that participated in one-on-one conversations. This section summarizes the needs that were identified during this task, traces the needs to the source and discusses how the ITS Plan and future City ITS Program can help address the need.

### 5.1 Infrastructure Needs

The first major infrastructure need is additional **traffic signals** within the City. There are many intersections within the City that warrant a traffic signal given the volume of traffic that passes through the intersection, but due to unusual challenges related to ROW constraints, the City does not have funding for these signals. The lack of traffic signals contributes to increased response times for police and fire by 1 to 3 minutes depending on the time of day due to congested intersections and a lack of coordination along the corridor. It also contributes to heavy intersection delays at multiple intersections, where cars have been seen to queue all the way to the next intersection, causing further delays and additional traffic challenges on other roadways.

The second major infrastructure need related to transportation in the City is for a **connected traffic signal network**, to allow for real-time management of the roadway network and create a foundation for a future ITS system to

build on. Providing fiber communications to traffic signals will allow the City to actively manage their transportation network when crashes, freeway closures, special events or construction disrupt the normal flow of traffic.

## 5.2 Staffing Needs

The most significant staffing need is for a **transportation engineer** to assume responsibility for items related to traffic engineering and engineering standards related to transportation. Without a designated transportation engineer at the City, Buckeye has missed opportunities to apply for federal funding for transportation and ITS projects through MAG, as the application must be submitted through the transportation engineer. Without the opportunity to apply for funding through MAG, there is a lot of pressure on the limited City funds that are available.

There is a need to identify a staff position or group who will hold primary **responsibility for managing the ITS program** and transportation operations at the City. Responsibilities related to ITS and transportation operations currently reside with different staff members in different departments, but a clear location and management structure to support centralized management of ITS devices and systems will be needed. This may involve a combination of different City departments and potentially other agencies.

### Summary of Key Needs:

- Traffic signals at warranted intersections to improve emergency response and traffic congestion
- A connected traffic signal network to support active management of the signal system
- A transportation engineer to provide assistance on engineering standards and applications for federal funding
- A responsible party for the ITS Program
- Updated development standards to include ITS infrastructure
- Detour plans for the City
- Information from ADOT related to freeway construction and closures
- A centralized database for City construction and closure information
- A standardized Citywide asset management process, including a centralized GIS program
- Creative funding streams and opportunities outside of local funds.

## 5.3 Process and Policy Needs

In addition to needs that have a financial implication (infrastructure and staffing), there were needs identified that involved needing to update or create new processes to support City staff or City functions.

There is a need to update **development standards and requirements** to include ITS infrastructure. The City does not have updated standards for installation of conduit and does not regularly require developers to install it during development-related street construction. Updating these standards and requirements will help the City develop a communications backbone that is essential for its transportation system in the near- and long-term.

City incident response staff, including police, fire and public works, recognize a need for a process to **identify and establish traffic detours** in the City. Detours are needed when a freeway incident causes freeway traffic to be rerouted onto Buckeye arterials and when an incident blocks one of the major streets within the City. A new process should identify pre-determined detours so that responders can quickly identify and set up and facilitate the most efficient traffic movement along that detour. This process should also identify a standardized communication and nonfiction process between first responders, other City staff and other agency responders that may be involved (ADOT, Maricopa County Sheriff, Goodyear, Surprise, etc.). This will help increase efficiency of response and make sure that all necessary parties are informed.

There are no existing agreements or processes that facilitate the **sharing of information between ADOT and Buckeye** when there is construction activity on I-10 or SR 85 that will cause traffic to detour onto Buckeye roads. Putting a process in place is especially important as ADOT roadways intersect the City in both north-south (SR 85)

and east-west (I-10) directions, and closures or restrictions on the freeways have significant impacts on Buckeye roadways.

Currently, there is no location to find information about construction and closures on Buckeye roadways, and departments such as Police and Fire rely on Public Works to regularly inform them. While this has proven to be an acceptable method today, Police and Fire noted that having **real-time construction and closure information available** on a map in their vehicles is needed to support efficient incident and emergency response throughout the City.

The City does not currently have an agreed-upon **asset management process**, and in many cases, asset management within individual departments is informal and sometimes ad-hoc. There is a need for a more centralized and coordinated asset management process to allow the City to track its infrastructure and support proactive maintenance and life cycle planning. This is especially important to support the future CIP process that is in development, as it will allow annual CIP funds to be targeted to the most critical infrastructure issues.

One specific example of an asset management need is related to the City GIS program. GIS is a robust tool that supports nearly all departments in the City and can be leveraged to support this ITS plan as well. There is a need for a **management structure for GIS citywide**, including identification of the roles and responsibilities of that person or department as well as a set of standards and processes to update, add to or modify existing GIS files.

Finally, there is a need for identification of creative **funding streams** for traffic management and communications infrastructure. Most City departments rely on City general funds to fund projects, but the availability of these general funds is limited. Buckeye is currently in the process of developing a formalized CIP process to evaluate projects for funding, so there will be heightened competition for available funds. Identifying other funding opportunities or opportunities to pool funds together can help implement ITS projects that may otherwise take many years to program and construct.

## 6 NEXT STEPS

Using these identified needs as a foundation for moving forward, the next task in this project is to develop a Transportation System Management and Operations (TSMO) Plan. The TSMO Plan will identify a vision and goals for operations and management of the City's transportation network, specific priority facilities, key agreements and coordination efforts, and recommended staffing and business models for supporting TSMO at the City. The TSMO Plan will lay the ground work for the development of specific strategies and projects to develop and support a City ITS Program.

# APPENDIX A – REVIEW OF EXISTING DOCUMENTS

*Table A1 – Summary of Key Information*

Title	Key Information Relevant to the ITS Strategic Plan
Imagine Buckeye 2040 (Presentation from Public Workshop #2; November 2016)	<b>Results of resident survey for General Plan:</b> <ul style="list-style-type: none"> <li>• Top 3 Community Priorities:               <ul style="list-style-type: none"> <li>• Community that is Safe and Well-Prepared (40%)</li> <li>• Vibrant Sustainable Economy (16%)</li> <li>• Mobility and Connectivity (13%)</li> </ul> </li> <li>• Most important item to address:               <ul style="list-style-type: none"> <li>• Retail Shopping (45%)</li> <li>• Diverse Employment (18%)</li> <li>• Transportation Improvements (7%) (ranked 5th out of 7)</li> </ul> </li> <li>• Three things you like about Buckeye:               <ul style="list-style-type: none"> <li>• Natural Environment (22%)</li> <li>• Safe Neighborhoods (17%)</li> <li>• Affordability (15%)</li> </ul> </li> <li>• Buckeye’s biggest asset:               <ul style="list-style-type: none"> <li>• Transportation Corridors (30%)</li> <li>• Natural Environment (19%)</li> </ul> </li> <li>• Buckeye’s biggest threat:               <ul style="list-style-type: none"> <li>• Lack of Jobs (37%)</li> <li>• Transportation (5%) (ranked 5th out of 9)</li> </ul> </li> </ul>
Buckeye Capital Improvement Program (CIP) FY 2011-12 through FY 2017-18 (2012)	<b>Intelligent Transportation Systems section:</b> <ul style="list-style-type: none"> <li>• Major ITS initiatives mentioned in the Plan include: Vehicle Infrastructure Integration; Next Generation 9-1-1; Cooperative Intersection Collision Avoidance Systems; Integrated Vehicle Based Safety Systems; Integrated Corridor Management Systems; emergency transportation operations; Electronic Freight Management; 511 traveler information; and transit traveler information</li> <li>• Miller and Monroe ITS Project – City is looking to install fiber optic cable will lay along Monroe Road from Miller Road to the area of Ash Avenue for the implementation of a TMC. With this fiber optic backbone, Buckeye will have the ability to implement signal timing coordination, preemption for incident and emergency management, dynamic message signs for traveler information during special events, and CCTV.</li> <li>• Traffic signals, due to their cost and public safety requirements, should be a high priority in Buckeye’s CIP.</li> </ul>

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	<ul style="list-style-type: none"> <li>Fiber Installation project – Funds the installation of the Buckeye-owned fiber optic infrastructure to expand the Buckeye’s ability to connect remote locations securely. The project is for the installation of fiber optics into the initial areas identified in the Buckeye’s fiber feasibility study.</li> <li>Buckeye is pursuing construction of additional communication towers within its Planning Area. More research on the plan and location for these towers may be conducted during the CIP 7-year period.</li> </ul>
Buckeye General Plan Update (2007)	<p><b>Development Facts:</b></p> <ul style="list-style-type: none"> <li>It should be assumed that over 70 percent of the Buckeye Planning Area can be developed.</li> <li>There are currently over 167 square miles of land that have been approved for development through entitlements or zoning.</li> <li>These commitments are expected to produce approximately 287,479 dwelling units, a projected population of 776,000 and a population density of 4,647 persons per square mile (highest density within the Phoenix metro area).</li> <li>Buckeye has the unique potential to build a city that offers numerous transportation alternatives beyond just the automobile to accommodate this growth before it happens.</li> </ul> <p><b>Community Vision Components:</b></p> <ul style="list-style-type: none"> <li>One City, One Vision – The community will strive to be a model for other Valley cities and rapidly growing communities for its effective transportation and land use links, transit-oriented development, and sustainability objectives.</li> <li>Economic Sustainability</li> <li>Protecting the Unique Environment</li> <li>Connectivity – The highway network will be supported by a comprehensive internal system of parkways and major arterials, as well as rapid bus and local transit, light and commuter rail, recreational and commuter bike facilities, connected pedestrian facilities, tourist trolleys in downtown areas, and special needs transportation.</li> </ul> <p><b>Policy Goals Related to Transportation and ITS:</b></p> <ul style="list-style-type: none"> <li>Policy 1.7: Promote walkable built environments with safe, comfortable and convenient pedestrian-oriented facilities conducive to bicyclists, the physically handicapped, transit users, and those of all ages.</li> <li>Policy 5.2: Reserve locations with good transportation access for high quality employment-generating uses.</li> <li>Policy 8.1: Promote community-wide wireless internet network access.</li> <li>Policy 8.2: Require installation of high-speed network communications infrastructure as part of the utilities development phase of new development projects.</li> <li>Policy 8.3: Implement intelligent transportation systems for the Buckeye road network.</li> <li>Policy 8.6: Maintain access to technology in the community, to all sectors of the economy, to all neighborhoods, and to all activity centers.</li> <li>Policy 12.12: Minimize congestion and automobile-generated pollution by implementing transportation demand management techniques</li> </ul>

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	<ul style="list-style-type: none"> <li>• Policy 14.3: Design roads, transportation systems, and facilities for multimodal accessibility, including the integration of transit mobility and transit stops.</li> <li>• Policy 14.6: Coordinate with ADOT, MAG, and MCDOT to ensure that development within the Buckeye Planning Area successfully preserves the efficiency and functionality of the regional and statewide transportation network.</li> </ul>
City of Buckeye Development Code (2016)	<b>Section 5.5: Transportation and Connectivity</b> Purpose: Support the creation of a highly connected transportation system within the City in order to provide choices for drivers, bicyclists, and pedestrians; increase effectiveness of local service delivery; promote walking and bicycling; connect neighborhoods to each other and to local destinations such as employment, schools, parks, and shopping centers; reduce vehicle miles of travel and travel times; improve air quality; reduce emergency response times; mitigate the traffic impacts of new development; and free up arterial capacity to better serve regional long-distance travel needs.
Buckeye Code of Ordinances	<b>Section 18 – Development Impact Fees</b> Section 18-5 (B) Limitations on Use of Fees: Development impact fees and any interest thereon collected pursuant to this Chapter shall be spent to provide Capital Facilities associate with the same Category of Necessary public services in the same Service Area for which they were collected, including costs of Financing or Debt used by the City to finance such Capital Facilities, and other costs authorized by this Chapter, that are include in the Infrastructure Improvements Plan.  <b>Section 20 Off-Site Construction Requirements for Property Development:</b> Street Light Improvement Districts and identification that cost of improvements will fall on property owners.
Sun Valley and Wintersburg Parkway Alignment Study	The Trillium master planned community looks to create community core within the residential development, including a 250-acre business park. To support this development, it was proposed that Wintersburg Parkway be realigned to the Cactus Road alignment. Explanation of benefits: <ul style="list-style-type: none"> <li>• The realignment addresses the regional circulation system for Buckeye and the surrounding areas.</li> <li>• The developer will be responsible for the construction and cost of all infrastructure needed for the Project.</li> <li>• The traffic impact analysis will be updated to determine the location and functional classification of the new street circulation plan to provide an appropriate level of service. The right-of-way for Wintersburg Parkway will be dedicated to the City.</li> </ul>

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Buckeye Capital Improvement Program Standard Operating Procedures (2016)	<p>The CIP SOPs set forth the necessary administrative procedures and schedule which departments shall follow when submitting capital project requests.</p> <ul style="list-style-type: none"> <li>• Each Capital Project should be supported by the goals of the City as expressed in the various plans or programs, completed or being prepared, by all City departments.</li> <li>• Each capital project would then be but one element in a comprehensive program for improving:               <ol style="list-style-type: none"> <li>(1) the delivery of existing services;</li> <li>(2) the scope of services provided by the City;</li> <li>(3) the levels of efficiency; or</li> <li>(4) addressing the demands of growth and development of Buckeye.</li> </ol> </li> <li>• As such, a Capital Improvement Program provides a framework for the orderly execution of individual projects.</li> <li>• The Capital Improvement Program Review Committee: City Manager; 2. Assistant City Manager; 3. Director, Community Development; 4. Director, Community Services; 5. Director, Public Works; 6. Director, Finance; 7. Director, Water Resources; 8. Chief of Police; 9. Fire Chief; 10. Director, Information Technology; 11. City Engineer.</li> <li>• The Capital Improvement Program calendar provides, in chronological order, the key dates which are set each year to ensure prompt and efficient preparation and adoption of the Capital Budget:               <ul style="list-style-type: none"> <li>• <b>MIDDLE OF JULY</b> – Call for CIP Project, estimates, calendar of dates, and other related information sent to departments.</li> <li>• <b>SECOND WEEK OF SEPTEMBER</b> – Deadline for submission of CIP requests to the Construction and Contracting Division.</li> <li>• <b>FIRST WEEK OF OCTOBER</b> – Manager, Construction and Contracting Division briefs CIP Review Committee and City Manager on status of CIP requests.</li> <li>• <b>THIRD WEEK OF NOVEMBER</b> – Manager, Construction and Contracting Division furnishes CIP Review Committee with details and summaries of departmental CIP requests.</li> <li>• <b>FIRST WEEK OF DECEMBER</b> – The City Manager and the CIP Review Committee conducts executive reviews with departments. All Capital Projects are prioritized.</li> <li>• <b>MIDDLE OF JANUARY</b> – The City Manager and the CIP Review Committee submits the CIP and recommended Capital Budget to the City Council.</li> <li>• <b>MIDDLE OF FEBRUARY</b> – City Council submits comments on CIP to the City Manager.</li> <li>• <b>EARLY MARCH</b> – City Manager presents the Proposed Capital Budget to the Mayor and Council.</li> <li>• <b>SECOND WEEK OF APRIL</b> – Proposed Capital Budget is incorporated into the Annual Budget.</li> <li>• <b>LAST WEEK OF APRIL</b> – City Council adopts Capital Budget.</li> </ul> </li> </ul>